SPECIFICATIONS

TYPE OF CIRCUIT: A. C. operated; superhetrodyne circuit with two tuning ranges, covering standard broadcast (540 K. C. to 1720 K. C.) and short wave (5.6 M. C. to 18.0 M. C.) frequencies; Automatic Volume Control; and pentode output.

Codes 121 and 122 chassis of this model are similar with the exception of Speaker and Cabinet.

The receiver is designed to operate from a "Philco Utility Aerial," part No. 45-2450. This aerial system should be used to obtain maximum performance from the receiver.

POWER SUPPLY: Voltage—115 volts. Frequency—50-60 cycles. Power consumption—40 watts.

INTERMEDIATE FREQUENCY: 470 K. C.

TUNING RANGES: 540 K. C. to 1720 K. C.; 5.5 M. C. to 19.0 M. C.

AUDIO OUTPUT: 2 watts.

PHILCO TUBES USED: Five tubes: 1-6A7, 1st detector and oscillator; 1-78, I. F.; 1-75, 2nd detector, Automatic Volume Control, and 1st audio; 1-41, Output; and 1-84, Rectifier.

TUNING MECHANISM: Pulley and cable drive for Manual Tuning. Push-Button for Automatic Tuning. The procedure for adjusting and operating the Automatic Tuning Push-Buttons will be found in the instructions supplied with each set.

CABINETS: Code 121 chassis in type "T" cabinet
Code 122 chassis in type "F" cabinet

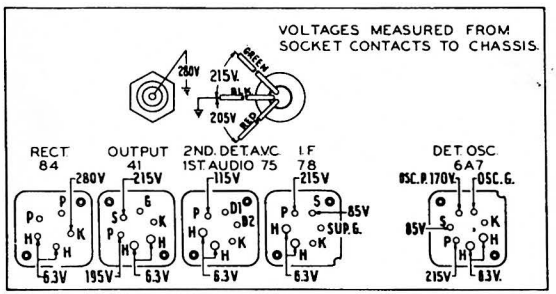

Fig. 1. Socket Voltage—Underside of Chassis View

The voltages indicated by arrows were measured with a Philco 027 Circuit Tester, which contains a sensitive voltmeter. Volume Control at minimum—Tuning Condenser set for no signal—line voltage 115 A. C.

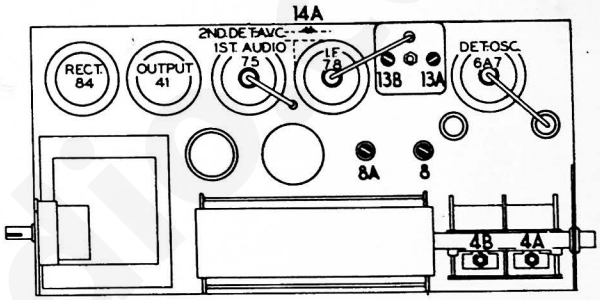

Fig. 2. Locations of Compensators

ALIGNMENT OF COMPENSATORS

EQUIPMENT REQUIRED: (1) Signal Generator. Philco Model 077 Signal Generator which has a fundamental frequency range from 115 to 36,000 K. C. is the correct instrument for this purpose. (2) Output meter: Philco Model 027 Circuit Tester, incorporates a sensitive output meter and is recommended. (3) Philco Fiber Handle Screw Driver, part no. 27-7059 and Fiber Wrench, part no. 3104.

OUTPUT METER: The Philco 027 Output Meter is connected to the plate and cathode terminals of the type 41 tube. Set the meter to use the 0-30 volt scale.

Operations In Order	Signal Generator			Receiver			Special Instructions
	Output Connections To Receiver	Dummy Antenna (Note A)	Dial Setting	Dial Setting	Control Settings	Adjust Compensators In Order	
1	6A7 Grid	.1mf	470 KC	580 KC	Vol. Cont. (max.)	(14A) (13B) (13A)	
2	Ant. Ter.	100mmf	18 MC	18 MC	"	(4B)	Note B
3	"	"	1550 KC	1550 KC	"	(8) (4A)	
4	"	"	580 KC	580 KC	"	(8A)	Roll Tuning Condenser
5	"	"	1550 KC	1550 KC	"	(8)	

NOTE A—The "Dummy Antenna" consists of a condenser connected in series with the signal generator output lead (high side). Use the capacity as specified in each step of the above procedure.

NOTE B—DIAL CALIBRATION: In order to adjust the receiver correctly, the dial must be aligned to track properly with the tuning condenser. To adjust the dial proceed as follows: With the push button unit disconnected from the gang, the pointer is to be set on the extreme left edge of the index line (low frequency end of the scale) with the gang closed. The gang is then opened until the pointer is at the right edge of the index line and, with the push button shaft at its closed stop, the push button coupling is tightened on the gang shaft.

REPLACEMENT PARTS

Schem. No.	Description	Part No.
1	Antenna Transformer (Range 2)	32-2822
2	Antenna Transformer (Range 1)	32-2821
3	Condenser (.05 mf. tubular)	30-4519
4	Tuning Condenser Assembly	31-2273
5	Resistor (51,000 ohms, ½ watt)	33-351339
6	Oscillator Transformer (Ranges 1 and 2)	32-3036
7	Resistor (20 ohms, ½ watt)	33-020339
8	Compensator (two sections)	31-6257
9	Condenser (370 mmf., silver plated mica)	30-1110
10	Condenser (3500 mmf., mica)	30-1094
11	Condenser (250 mmf., mica)	30-1032
12	Resistor (5000 ohms, ½ watt)	33-250339
13	1st I. F. Transformer Assembly	32-3075
14	2nd I. F. Transformer Assembly	32-2944
15	Resistor (51,000 ohms, ½ watt)	33-351339
16	Condenser (.03 mf. tubular)	30-4449
17	Resistor (32,000 ohms, ½ watt)	33-332339
18	Resistor (10,000 ohms, 1 watt)	33-310439
19	Resistor (1.0 meg., 3 watts)	33-510339
20	Volume Control and On-Off Switch	33-5276
21	Resistor (1.0 meg., ½ watt)	33-510339
22	Condenser (110 mmf., mica)	30-1031
23	Condenser (250 mmf., mica)	30-1032
24	Condenser (.01 mf. tubular)	30-4572
25	Resistor (99,000 ohms, ½ watt)	33-399339
26	Resistor (490,000 ohms, ½ watt)	33-449339
27	Resistor (490,000 ohms, ½ watt)	33-449339
28	Condenser (.1 mf., tubular)	30-4499
29	Condenser (.01 mf., tubular)	30-4479
30	Resistor (4.0 meg., ½ watt)	33-540339
31	Condenser (8 mf.-4 mf., electrolytic)	30-2323
32	Condenser (.01 mf., tubular)	30-4572
33	Output Transformer	32-7980
34	Cone and Voice Coil Assembly (Speaker Part No. 36-1426-1)	36-4083
	Part No. 36-1426-3	36-4085
	Cone and Voice Coil Assembly (Speaker Part No. 36-1449)	36-4086
35	†Field Coil for Speaker (Part No. 36-1426)	
	†Field Coil for Speaker (Part No. 36-1449)	
36	Condenser (8 mf. electrolytic)	30-2319
37	Resistor (250 ohms, wire wound)	33-125431
38	Resistor (70 ohms, ½ watt)	33-070339
39	Power Transformer, 115 v., 50-60 cycles	32-7974
40	Condenser (.01 mf. .01 mf., bakelite)	390J-1)G
41	Pilot Lamp	34-2064
42	Pilot Lamp	34-2064
43	Wave Switch	42-1449

Miscellaneous Parts

Description	Part No.
Automatic Tuning Unit (complete)	31-2282
Bezel Assembly (dial)	40-6364
Bezel Gasket (dial)	27-9174
Bezel (push-button)	28-5929
Bezel Gasket (push-button)	27-9218
Bezel Clamp (push-button)	28-5153

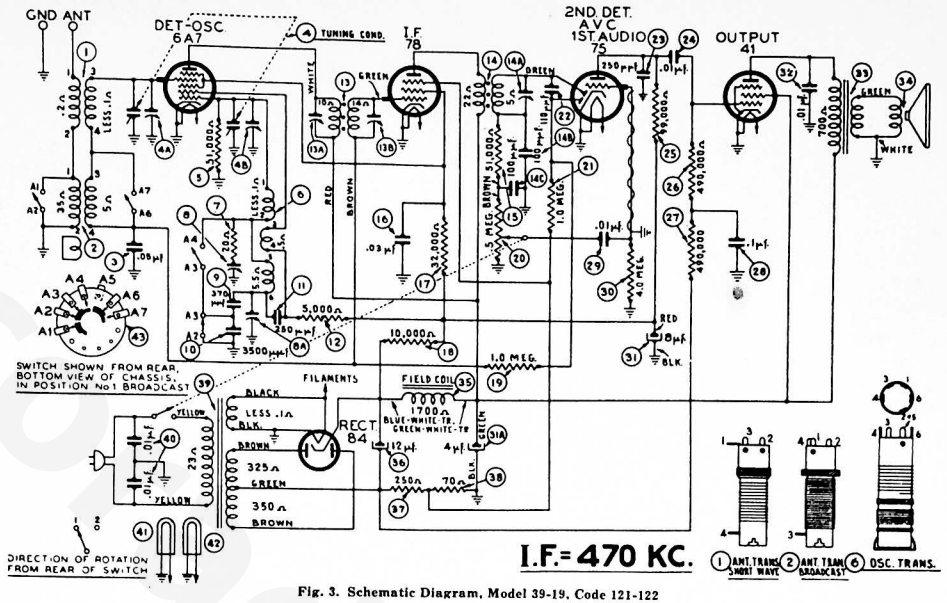

Fig. 3. Schematic Diagram, Model 39-19, Code 121-122

Description	Part No.
Cable and Plug (power)	L 2778
Cable Speaker (F Cabinet)	41-3431
Dial and Frame Assembly	31-2298
Dial Tuning Drum Assembly	31-2281
Dial Tuning Cord Assembly	31-2275
Dial Tuning Spring (cord)	28-8919
Clip (mtg. R. F. coils)	28-5002
Clip (mtg. R. F. coils)	28-5003
Escutcheon Plate (extension shafts, F Cabinet)	56-1051
Escutcheon Pins	W-950
Knob (Tuning)	27-4750
Knob (Volume)	27-4753
Knob (Wave Switch)	27-4754
Pilot Lamp Socket Assembly	38-9612
Pointer (Dial)	28-5934
Push-Button	27-4749
Screw Tuning Knob	28-6882
Shaft Extension (Volume and Wave Switch)	38-9640
Shaft Extension (Tuning)	28-6928
Sleeve-Long-Tuning Shaft Extension (F Cabinet)	28-6935
Sleeve-Short-Tuning Shaft (T and F Cabinet)	28-6887
*Speaker (T Cabinet—code 121)	36-1426-3
optional	36-1426-1
Speaker (F Cabinet—code 122)	36-1449
Spring-Retaining Volume Shaft	28-8915
Socket (5 prong)	27-6035
Socket (6 prong)	27-6036
Socket (7 prong)	27-6107
Tab Kit	40-6391

* When ordering Speaker or Cone assembly specify which of the small numbers (-1 or -3) following the part number is required.
† Replace Speaker.

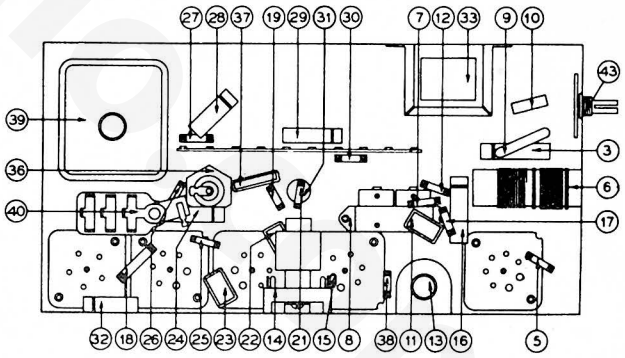

Fig. 4. Part Locations, Underside of Chassis

PHILCO . . . . . Model 39-19, Codes 121 & 122